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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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7590

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EXAMINER

DINH, TUAN T

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 01/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/825,418

Applicant(s)

AWAKURA ET AL.

Examiner

Tuan T Dinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 3,20,21 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,19,22,23,26,27 and 31 is/are rejected.
- 7) ☒ Claim(s) 8-18,29,30 and 32-39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 6, 9, 22-24, 26, 28, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsumi (JP 401235662A) in view of Harada et al. (U. S. Patent 5,966,294).

As to claim 1, 19, Katsumi discloses a wiring board as shown in figures 2a-2d comprising:

- an insulative base material (3-figure 2a);
- a conductor pattern (2-figure 2a) formed thereon; and
- a magnetic thin film (5-figure 2b) formed on said conductor pattern.

Katsumi does not disclose the magnetic thin film being made of a magnetic loss material having a maximum value of lost factor existing within a frequency range of 100MHz to 10 GHz.

Harada teaches a printed circuit board (PCB-51) disclosed in figures 22-30 having a magnetic layer (56) including a magnetic loss, the magnetic loss has a maximum value of lost factor within a frequency range of 100MHz-10GHz (column 15, lines 36-46, column 16, lines 46-55, column 17, lines 5-20).

It would have been obvious to have a magnetic film (layer) including a magnetic loss material within a high frequency range as taught by Harada to employ the wiring board of Katsumi in order to prevent unintentional EMI and malfunction of a circuit caused by intrusion of external electromagnetic field there into the circuit board.

As to claim 2, Katsumi discloses a wiring board as shown in figures 2a-2d wherein said magnetic thin films are formed on said conductor patterns along outer surfaces of said conductor patterns (see figure 2b).

As to claim 6, Katsumi discloses a wiring board as shown in figures 1-5 wherein said magnetic thin films are produced by at least one of sputtering and vapor deposition.

As to claim 22, Katsumi discloses a wiring board as shown in figures 1-5 wherein said conductor part comprises signal line conductor patterns (2-figure 2a-silver solder layer).

As to claim 23, Katsumi discloses a wiring board as shown in figures 1-5 wherein said magnetic thin film is formed on said signal line conductor patterns (5-figure 2b).

As to claim 26, Katsumi discloses a wiring board as shown in figures 1-5 wherein said magnetic thin film is fabricated by at least one method of sputtering and vapor deposition.

As to claim 28, Katsumi discloses a wiring board as shown in figures 1-5 wherein said wiring board is a multilayer printed wiring board comprising a structure of at least 3 layers.

As to claim 31, Katsumi and Harada do not teach the magnetic loss material exhibiting a DC electrical resistivity having a value larger than 500 micro-Ohms * cm.

It would have been obvious to have the magnetic loss material exhibiting a DC electrical resistivity having a value larger than 500 micro-Ohms * cm in order to provide high permeability and low power loss, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

3. Claims 4-5, 7, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsumi in view of Harada, and further in view of Murada et al. (U. S. Patent 5,493,074).

As to claims 4-5, Katsumi and Harada do not disclose said insulative base material is configured of a flexible material, and said flexible material is a polyimide.

Murada shows an insulative base (1) disclosed in figures 2-3 comprising a flexible material (column 3, line 60) made by a polyimide (column 3, line 62).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a flexible polyimide insulation base as taught by Murada to employ the wiring board of Katsumi and Harada in order to provide exhibiting insulating properties, flex life for the circuit board, and low cost for manufacture.

As to claims 7 and 27, Katsumi and Harada do not disclose thickness of said magnetic thin films is within range of 0.3 μm to 20 μm . Murada shows a thickness of metal foil (3-figure 2a) is 18 μm .

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a thickness of metal foil as taught by Murada to provide the

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thickness of the magnetic thin film of Katsumi and Harada in order to reduce an electrical resistivities.

Allowable Subject Matter

4. Claims 8-18, 29-30, 32-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments with respect to claims 1-2, 4-19, 22-24, and 26-39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jin et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TD
January 8, 2003.

Albert W. Paladini 1-10-03
ALBERT W. PALADINI
PRIMARY EXAMINER